ABSTRACT

The invention provides a ≥ 4 kHz repetition rate argon fluoride excimer laser system for producing an UV wavelength 193nm output. The ≥ 4 kHz repetition rate argon fluoride excimer laser system includes an argon fluoride excimer laser chamber for producing a 193nm discharge at a pulse repetition rate ≥ 4 kHz. . The ≥ 4 kHz repetition rate argon fluoride excimer laser chamber includes magnesium fluoride crystal optic windows for outputting the 193nm discharge as a ≥ 4 kHz repetition rate excimer laser 193nm output with the magnesium fluoride crystal optic windows having a 255nm induced absorption less than 0.08 Abs/42mm when exposed to 5 million pulses of 193nm light at a fluence ≥ 40mj/cm^2/pulse and a 42mm crystal 120nm transmission of at least 30%.